Please replace the paragraph beginning at page 13, line 11 with the following:

The present invention is described in the context of a software tool, portions of which are comprised of computer-readable and computer-executable instructions which reside, for example, in computer-usable media of a computer system such as that exemplified by Figure 1. The present invention is primarily described as being used with a tool for designing, configuring, programming, compiling, building (assembling), emulating, and debugging an embedded microcontroller, in particular a class of microcontrollers that provide analog and/or digital subsystems comprising many dynamically configurable blocks. An example of this class is referred to herein as a programmable single-chip system. Additional information regarding such systems is provided in the co-pending, commonly-owned US Patent Application, Attorney Docket No. CYPR-CD00232, Serial No. 10/033,027, filed October 22, 2001, by W. Snyder, and entitled "Programmable Microcontroller Architecture," hereby incorporated by reference.

A3

Please replace the paragraph beginning at page 14, line 4 with the following:

Figure 2A is a block diagram of an integrated circuit (or microcontroller) 210 that exemplifies a microcontroller which uses the programmable single-chip architecture. In the illustrated embodiment, integrated circuit 210 includes a system bus 211, and coupled to bus 211 are synchronous random access memory (SRAM) 212 for storing volatile or temporary data during firmware execution, central processing unit (CPU) 214 for processing information and instructions, flash read-only memory (ROM) 216 for holding instructions (e.g., firmware), input/output (I/O) pins 218 providing an interface with external devices and the like, and system blocks 225. The system blocks 225 include analog blocks and digital blocks, which are further described below (see Figure 2B).

A4

Please replace the paragraph beginning at page 14, line 15 with the following:

Referring to Figure 2B, an embodiment of system block 225 is depicted in greater detail. In this embodiment, system block 225 includes an analog functional block 230, a digital functional block 240, and a programmable interconnect 250. Analog block 230 includes, in the present embodiment, a matrix of interconnected analog blocks A1 through AN. The number N may be any number of analog blocks. Likewise, digital block 240 includes, in the present embodiment, a matrix of interconnected digital blocks D1 through DM. The number M may be any number of digital blocks. The analog blocks A1 through AN and the digital blocks D1 through DM are fundamental building blocks that may be combined in different ways to accomplish different functions. Importantly, different combinations of blocks, producing different functions, may exist at different times within the same system. For example, a set of blocks configured to perform the function of analog-to-digital conversion may sample a signal. After processing that signal in the digital domain, those same blocks (perhaps in conjunction with a few others) may be recombined in a different configuration to perform the function of digital-to-analog conversion to produce an output signal.

A5

Please replace the paragraph beginning at page 16, line 4 with the following:

With reference next to Figure 3, process 300 illustrates exemplary steps used by a microcontroller design tool in accordance with one embodiment of the present invention. The purpose of process 300 is to configure, program, compile, build, emulate and debug a customized microcontroller (a "target device") based on the integrated circuit 210 and system blocks 225 of Figures 2A and 2B.

A6

Please replace the paragraph beginning at page 17, line 7 with the following:

In step 310, applicable "user modules" are selected. A user module, as used herein, is a preconfigured function that may be based on more than one system blocks. A user module, once

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A7 emdd. placed and programmed, will work as a peripheral on the target device. At any time in process 300, user modules may be added to or removed from the target device.

Please replace the paragraph beginning at page 17, line 13 with the following:

A8 The selected user modules can then be "placed" or "mapped" onto the system blocks 225 of Figure 2B. Once a user module is placed, its parameters can be viewed and modified as needed. Global parameters used by all of the user modules (for example, CPU clock speed) can also be set.

Please replace the paragraph beginning at page 17, line 18 with the following:

A9 Continuing with step 310 of Figure 3, interconnections between the selected user modules can be specified, either as each user module is placed or afterwards. The pin-out for each programmable system block can be specified, making a connection between the software configuration and the hardware of the target device.

VERSION OF AMENDMENTS WITH CHANGES SHOWN:

IN THE SPECIFICATION

Please replace the paragraph beginning at page 7, line 9 with the following:

Figure 2A is a block diagram of an exemplary programmable system [on a chip (SoC)] architecture used with one embodiment of the present invention.

Please replace the paragraph beginning at page 7, line 12 with the following:

Figure 2B is a block diagram of an exemplary arrangement of [SoC] system blocks used with one embodiment of the present invention.

Please replace the paragraph beginning at page 13, line 11 with the following:

The present invention is described in the context of a software tool, portions of which are comprised of computer-readable and computer-executable instructions which reside, for example, in computer-usable media of a computer system such as that exemplified by Figure 1. The present invention is primarily described as being used with a tool for designing, configuring, programming, compiling, building (assembling), emulating, and debugging an embedded microcontroller, in particular a class of microcontrollers that provide analog and/or digital subsystems comprising many dynamically configurable blocks. An example of this class is referred to herein as a programmable single-chip system [on a chip (PSoC)]. Additional information regarding [PSoCs] such systems is provided in the co-pending, commonly-owned US Patent Application, Attorney Docket No. CYPR-CD00232, Serial No. [_____] 10/033,027, filed October 22, 2001, by W. Snyder, and entitled "Programmable Microcontroller [Programmable System on a Chip] Architecture," hereby incorporated by reference.

Please replace the paragraph beginning at page 14, line 4 with the following:

Figure 2A is a block diagram of an integrated circuit (or microcontroller) 210 that exemplifies a microcontroller which uses the [PSoC] programmable single-chip architecture. In the illustrated embodiment, integrated circuit 210 includes a system bus 211, and coupled to bus 211 are synchronous random access memory (SRAM) 212 for storing volatile or temporary data during firmware execution, central processing unit (CPU) 214 for processing information and instructions, flash read-only memory (ROM) 216 for holding instructions (e.g., firmware), input/output (I/O) pins 218 providing an interface with external devices and the like, and system [on a chip (SoC)] blocks 225. The [SoC] system blocks 225 include analog blocks and digital blocks, which are further described below (see Figure 2B).

Please replace the paragraph beginning at page 14, line 15 with the following:

Referring to Figure 2B, an embodiment of [SoC] system block 225 is depicted in greater detail. In this embodiment, [SoC] system block 225 includes an analog functional block 230, a digital functional block 240, and a programmable interconnect 250. Analog block [220] 230 includes, in the present embodiment, a matrix of interconnected analog blocks A1 through AN. The number N may be any number of analog blocks. Likewise, digital block 240 includes, in the present embodiment, a matrix of interconnected digital blocks D1 through DM. The number M may be any number of digital blocks. The analog blocks A1 through AN and the digital blocks D1 through DM are fundamental building blocks that may be combined in different ways to accomplish different functions. Importantly, different combinations of blocks, producing different functions, may exist at different times within the same system. For example, a set of blocks configured to perform the function of analog-to-digital conversion may sample a signal. After processing that signal in the digital domain, those same blocks (perhaps in conjunction with a few others) may be recombined in a different configuration to perform the function of digital-to-analog conversion to produce an output signal.

Please replace the paragraph beginning at page 16, line 4 with the following:

With reference next to Figure 3, process 300 illustrates exemplary steps used by a microcontroller design tool in accordance with one embodiment of the present invention. The purpose of process 300 is to configure, program, compile, build, emulate and debug a customized microcontroller (a "target device") based on the integrated circuit 210 and [SoC] system blocks 225 of Figures 2A and 2B.

Please replace the paragraph beginning at page 17, line 7 with the following:

In step 310, applicable "user modules" are selected. A user module, as used herein, is a preconfigured function that may be based on more than one [SoC] system blocks. A user module, once placed and programmed, will work as a peripheral on the target device. At any time in process 300, user modules may be added to or removed from the target device.

Please replace the paragraph beginning at page 17, line 13 with the following:

The selected user modules can then be "placed" or "mapped" onto the [SoC] system blocks 225 of Figure 2B. Once a user module is placed, its parameters can be viewed and modified as needed. Global parameters used by all of the user modules (for example, CPU clock speed) can also be set.

Please replace the paragraph beginning at page 17, line 18 with the following:

Continuing with step 310 of Figure 3, interconnections between the selected user modules can be specified, either as each user module is placed or afterwards. The pin-out for each [PSoC] programmable system block can be specified, making a connection between the software configuration and the hardware of the target device.

IN THE DRAWINGS

Applicant respectfully requests approval of the drawing changes proposed in the enclosed Request for Approval of Drawing Changes.

SUPPORT FOR AMENDMENTS

Support for the amendments herein can be found in the specification and Figures as originally filed (e.g., page 13, line 11 through page 15, line 8; Figure 2B) and in the related application Ser. No. 10/033,027. The present amendment intends to clarify references to trademarks of Cypress